

CLAIMS

1. A processing device comprising:
 - 2 a processing module capable of multitasking multiple tasks;
one or more associated circuits, which may be selectively configured
 - 4 responsive to control signal, coupled to said processing module for supporting
the processing module; and
 - 6 a memory storing a control word for configuring the associated circuits,
wherein each task has an associated control word which is stored in the memory
 - 8 while the task is being executed by the processing module.
2. The processing device of claim 1 wherein said control word
2 comprises a plurality of fields.
3. The processing device of claim 2 wherein each of said associated
2 circuits has an associated field.
4. The processing device of claim 3 wherein each of said associated
2 circuits has configuration circuitry for configuring the associated circuit
responsive to a value stored in said associated field.
5. The processing device of claim 4 wherein said configuration
2 circuitry comprises frequency control circuitry.
6. The processing circuitry of claim 4 wherein said configuration
2 circuitry comprises voltage selection circuitry.
7. The processing circuitry of claim 4 wherein said configuration
2 circuitry comprises interface circuitry for selecting one of a plurality of data
paths.
8. The processing circuitry of claim 4 wherein said configuration
2 circuitry comprises cache configuration circuitry.

9. The processing device of claim 1 wherein said processing module
2 includes a plurality of processing subsystems which may be selectively
configured by said control word.

10. The processing device of claim 1 wherein said processing module is
2 a microprocessor module.

11. The processing device of claim 1 wherein said processing module is
2 a digital signal processor.

12. The processing device of claim 1 wherein at least one of said
2 associated circuits is a caching circuit.

13. The processing device of claim 8 wherein one of said associated
2 circuits is an interface to the caching circuit.

14. The processing device of claim 1 wherein said processing module
2 comprises a first processing module, and further comprising one or more
additional processing modules.

15. A method of operating a processing device including a processing
2 module capable of multitasking multiple tasks coupled to one or more associated
circuits, comprising the steps of:

4 identifying a current task; and
storing a control word associated with said current task in a memory; and
6 configuring the associated circuits to a state responsive to the control
word during execution of said current task.

16. The method of claim 15 wherein said storing step comprises the
2 step of storing a control word having a plurality of predefined fields.

17. The method of claim 16 wherein each of said associated circuits has
2 an associated field in said control word.

18. The method of claim 17 wherein said enabling or disabling step
2 comprises the step of configuring each of the associated circuits responsive to a
value stored in said associated field.

20. The method of claim 19 wherein said configuration step comprises
2 the step of controlling the frequency of said associated circuitry.

21. The method of claim 19 wherein said configuration step comprises
2 the step of selecting a voltage.

22. The method of claim 19 wherein said configuration step comprises
2 the step of selecting one of a plurality of data path configurations to said
associated circuitry.

23. The method of claim 19 wherein said configuration circuitry
2 comprises configuring a cache.

24. The method of claim 15 wherein said processing module includes a
2 plurality of processing subsystems and further comprising the step of
configuring said processing subsystems responsive to said control word.

25. A processing device comprising:
2 multiple processing modules each capable of multitasking multiple tasks;
one or more associated circuits shared between two or more processing
4 modules, which may be selectively configured responsive to a control signal,
coupled to said processing modules for supporting the processing module;
6 multiple memories associated with respective processing modules for
storing a control word for enabling and disabling the associated circuits, wherein

8 each task has an associated control word which is stored in the memory while
the task is being executed by the processing module.

26. A mobile communications device comprising:
2 an antenna for receiving and transmitting signals; and
receiver/transmitter circuitry for receiving and transmitting audio and
4 data signals, said receiver/transmitter circuitry comprising:
a processing module capable of multitasking multiple tasks;
6 one or more associated circuits, which may be selectively
configured responsive to control signal, coupled to said processing module for
8 supporting the processing module; and
a memory storing a control word for configuring the associated
10 circuits, wherein each task has an associated control word which is stored in the
memory while the task is being executed by the processing module.